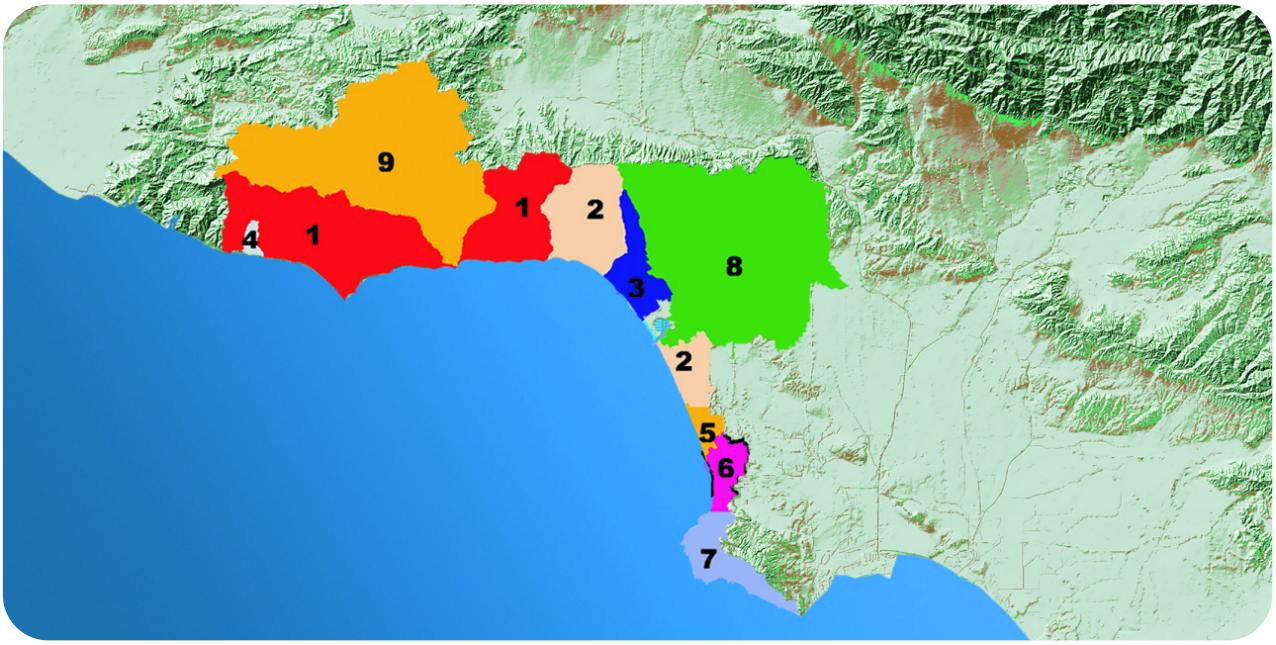
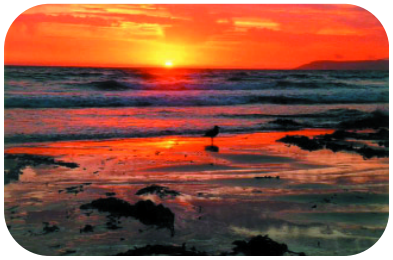


SANTA MONICA BAY BEACHES BACTERIAL TMDLs
COORDINATED SHORELINE MONITORING PLAN

PREPARED BY THE TECHNICAL STEERING COMMITTEE
CO-CHAIRS
CITY AND COUNTY OF LOS ANGELES



REVISED:
APRIL 7, 2004

SANTA MONICA BAY BEACHES BACTERIAL TMDLS
COORDINATED SHORELINE MONITORING PLAN

PREPARED BY THE TECHNICAL STEERING COMMITTEE
CITY OF LOS ANGELES AND COUNTY OF LOS ANGELES, CO-CHAIRS

SUBMITTED NOVEMBER 12, 2003
REVISED APRIL 7, 2004

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REFERENCES

APPENDICES

LIST OF ACRONYMS

APHA	American Public Health Association
ASBS	Area of Special Biological Significance
EMD	City of Los Angeles, Department of Public Works, Bureau of Sanitation, Environmental Monitoring Division
LACDHS	Los Angeles County Department of Health Services
LACDPW	Los Angeles County Department of Public Works
LACSD	Los Angeles County Sanitation Districts
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resource Defense Council
SMBBB	Santa Monica Bay Beaches Bacterial
TMDL	Total Maximum Daily Load

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1.0 EXECUTIVE SUMMARY

The U.S. Federal Regulations under the Clean Water Act (CWA) of 1972 require States to develop a list of impaired waters and the pollutants for which they are impaired, also known as the 303 (d) List. Subsequently, States must establish a watershed-based pollutant specific Total Maximum Daily Load (TMDL) to bring impaired water bodies into compliance with the water quality standards necessary for its beneficial uses. This TMDL is then incorporated as an amendment to the regional Basin Plan. The designated responsible jurisdictions and responsible agencies must then reduce their discharges to meet these waste load allocations according to a compliance schedule.

The Santa Monica Bay beaches were designated as impaired and included on California's 1998 CWA 303(d) list of impaired waters due to excessive amounts of coliform bacteria. The presence of high coliform bacteria concentrations in surface waters is an indication that water quality may not be sufficient to maintain the beneficial use of these waters for human body contact recreation (REC-1). The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) released a first draft of the Santa Monica Bay Beaches Bacterial TMDL (SMBBB TMDL) on November 9, 2001. Later, the Regional Board staff decided to bifurcate the SMBBB TMDL into two TMDLs, one for dry and one for wet weather. Both the SMBBB dry- and wet-weather TMDLs were approved by EPA in June 2003 and became effective on July 15, 2003.

The SMBBB TMDLs require responsible jurisdictional groups and responsible agencies within the Malibu Creek and Ballona Creek subwatersheds to achieve compliance with the TMDLs according to specified schedules[1]. Four years after the effective date of the TMDLs the Regional Board will re-open the TMDLs to re-consider certain provisions based on new data, some of which will be collected under this monitoring plan, including:

- the number of allowable winter dry-weather exceedance days;
- re-evaluation of the Arroyo Sequit Canyon and Leo Carrillo Beach reference system;
- estimated number of wet-weather exceedance days in the critical year at all beach locations, including the reference system(s); and
- final allowable wet-weather exceedance days for each beach location and their future adjustment.

[1] According to the SMBBB TMDLs, responsible jurisdictions and agencies are defined as: (1) local agencies that are responsible for discharges from a publicly owned treatment works to the Santa Monica Bay watershed or directly to the Bay, (2) local agencies that are permittees or co-permittees on a municipal storm water permit [within the SMB Watershed Management Area], (3) local or state agencies that have jurisdiction over a beach adjacent to Santa Monica Bay, and (4) the California Department of Transportation pursuant to its storm water permit.

- the need for clarification or revision of the geometric mean compliance requirements

The TMDLs' compliance dates are as follows:

- summer dry-weather period: three years;
- winter dry-weather period: six years; and
- wet-weather period: up to 10 or up to 18 years, depending on whether an integrated water resources implementation approach is used.

Compliance dates are measured from the TMDLs' effective date of July 15, 2003.

Coordinated Shoreline Monitoring Plan Development

This Coordinated Shoreline Monitoring Plan is developed by a Technical Steering Committee, which is co-chaired by the County and City of Los Angeles and consists of representatives from many of the TMDLs' responsible agencies. Valuable feedback is also generously provided by staff from the Regional Board, Heal the Bay, Santa Monica BayKeeper, and the Sanitation Districts of Los Angeles County (LACSD).

The plan is designed to comply with the monitoring requirements of both the dry- and wet-weather TMDLs by proposing a single Coordinated Shoreline Monitoring Plan, and to provide some of the data to support the re-evaluations that will be made when the TMDLs are re-considered in four years.

The TMDLs establish multi-part numeric targets based on three bacteriological analytical parameters: Total coliform density, fecal coliform density and enterococcus density, with density reported in bacteria counts per 100 milliliters of water sampled. These numerical targets have been set based on the Los Angeles Basin Plan objectives for body-contact recreation (REC-1) and are equivalent to the State bacteriological standards set pursuant to Assembly Bill 411.

Requirements of Coordinated Shoreline Monitoring Plan

Both the dry- and wet-weather TMDLs require that, within 120 days of their respective effective dates, the responsible agencies submit a coordinated shoreline monitoring plan to be approved by the Regional Board's Executive Officer. The TMDLs prescribe criteria by which compliance monitoring locations are to be established, but the responsible agencies have the option of conducting either daily or weekly sampling. The TMDLs compliance monitoring sites are to be established as follows:

All existing monitoring sites, in their present locations or moved to the wave wash of a "major drain," are to become compliance monitoring locations. Existing sites are those shoreline locations monitored by the City of Los Angeles, County Sanitation

Districts of Los Angeles County, and the Los Angeles County Department of Health Services at the time of adoption of the TMDLs by the Regional Board. "Major drains" are defined as those publicly owned and observed to have persistent, measurable dry-weather flow

All major drains are to be considered for monitoring.

Subwatersheds without an existing shoreline monitoring location must have a new site added at the wave wash of any "major drain" or creek. If no major drain or fresh water creek exists, the new site is to be added at the midpoint of a beach listed in the TMDL.

Sampling Schedule in the Coordinated Shoreline Monitoring Plan

The monitoring program will begin as soon as all Memorandums of Agreements have been executed between the City of Los Angeles and those agencies using the City's services, but no later than November 1, 2004. Monthly updates on the progress of the Memorandum of Agreements will be provided to the Regional Board.

The proposed compliance monitoring program consists of 67 sampling sites monitored on a weekly basis. Fifty of the 67 sites are existing monitoring sites; the remaining 17 are newly added sites. All routine samples are scheduled to be collected on Mondays: 32 by the City of Los Angeles Bureau of Sanitation, Environmental Monitoring Division (EMD), 26 by the County of Los Angeles Department of Health Services (LACDHS), and nine by the Sanitation Districts of Los Angeles County.

In addition to the 67 monitoring sites, the proposed program also includes nine sites where routine dry-weather flow observations will be made. One year from the initiation of the monitoring program, the Regional Board will evaluate the accumulated flow observation data to determine whether any of the nine observation sites warrants being added to the list of compliance monitoring sites.

Procedures following Elevated Bacterial Levels (Exceedances)

For the first three years of the summer dry-weather period and the first six years of the winter dry-weather period, EMD, LACDHS and LACSD will conduct accelerated testing 48 hours, and if necessary, 96 hours following the initial bacterial exceedance. All three indicators, and not just the exceeding indicator, will be tested during accelerated testing. For those sites monitored by the EMD, not all sites showing exceedances may be selected for accelerated sampling due to operational constraints. When this occurs, EMD will randomly select locations where accelerated sampling will be done. However, if a site is deemed chronically problematic by the responsible agencies within that jurisdictional group, the jurisdictional group may select that site for accelerated sampling.

Analytical Methodology

Seawater samples will be tested for specific indicator bacteria concentrations whose presence indicates that enteric pathogenic microorganisms may also be present. These indicator bacteria (i.e., total coliforms, fecal coliforms or *E. coli*, and enterococcus) can be isolated and quantified by relatively simple microbiological techniques. Sampling and analytical procedures as specified in *Standard Methods for the Examination of Water and Wastewater, 18th – 20th Edition* (APHA 1992, 1998, respectively), EPA or Regional Board approved methods, will be used.

Quality assurance and quality control procedures will be conducted to confirm that the analytical data collected are valid and that they are comparable among all participating laboratories.

Data from several laboratories (agencies) will be utilized to comply with the monitoring requirements of the Santa Monica Bay Beaches Bacterial TMDLs. At a minimum, EMD, LACSD, and LACDHS will be involved. In order to ensure that these data are comparable relative to the level of quality, the participating laboratories will be requested to participate in inter-laboratory calibration exercises.

Data Management and Reporting

Monthly data summary reports will be submitted to the Regional Board by the last day of each month for data collected during the previous month. Two agencies will submit the monthly reports on behalf of all responsible agencies: EMD on behalf of Jurisdictional Groups 1 through 6, 8, and 9; and LACSD on behalf of Jurisdictional Group 7. LACDHS will submit its data to EMD for compilation and submittal to the Regional Board. Copies of the monthly reports will be distributed to the lead agency of the appropriate jurisdictional group. If requested, the lead agency of each jurisdictional group will distribute the monthly reports to the responsible agencies within their respective jurisdictional group.

2.0 INTRODUCTION

This monitoring proposal is submitted to fulfill the 120-day requirement for developing a coordinated shoreline monitoring plan for both the Dry-Weather and Wet-Weather Santa Monica Bay Beaches Bacteria Total Maximum Daily Loads (SMBBB TMDLs). These TMDL regulations can be found in Appendix K of this document as reference; or, they can be found on the Los Angeles Regional Water Quality Control Board's website at http://www.swrcb.ca.gov/rwqcb4/.

2.1 Background

Federal Regulations under the Clean Water Act require States to develop a list of impaired waters and the pollutants for which they are impaired, also known as the 303(d) List. The States must then establish what the assimilative capacity of the water body is for the impairing pollutants in the form of a Total Maximum Daily Load (TMDL) of the pollutant that the water body can receive and still achieve the water quality objectives necessary to protect its beneficial uses (e.g., REC-1). The sources must then reduce their discharges to meet these waste load allocations according to a compliance schedule. This Total Maximum Daily Load (TMDL) is incorporated as an amendment to the regional Water Quality Control Plan (Basin Plan).

The Santa Monica Bay beaches were designated as impaired and included on California's 1998 CWA §303(d) list of impaired waters due to excessive amounts of coliform bacteria. The presence of coliform bacteria in surface waters is an indicator that water quality may not be sufficient to maintain the beneficial use of these waters for human body contact recreation (REC-1). To allow more time to consider the extensive public comments on the wet-weather elements of the TMDL, the Regional Board staff decided to bifurcate the Santa Monica Bay Beaches Bacterial TMDL into two TMDLs, one for dry and one for wet weather.[2] Both the SMBBB dry- and wet-weather TMDLs were approved by EPA in June 2003 and became effective on July 15, 2003 with the following actions required:

- Both TMDLs require the responsible jurisdictions and responsible agencies to submit a coordinated, shoreline monitoring plan within 120 days of the effective date of the TMDLs.
- The Dry Weather TMDL further requires that within the same 120 days of the effective date the responsible jurisdictions and agencies identify and provide documentation on 342 potential discharges to Santa Monica Bay beaches, including those within the Area of Special Biological Significance in northern Santa Monica Bay from Latigo Point to the Los Angeles/Venture county line.

[2] See Appendix A Development History of SMBBB TMDL

- The TMDLs require responsible jurisdictions and agencies to achieve compliance with the TMDL according to specified schedules, with a longer schedule allowed for achieving the Wet Weather TMDL.
- The Wet Weather TMDL requires the responsible agencies and jurisdictions to develop an implementation plan for meeting the compliance schedule.
- Four years after the effective date of the TMDLs the Regional Board will re-consider the TMDLs, including certain provisions based on new data, some of which will be collected under this monitoring plan, including:

    - the number of allowable winter dry weather exceedance days
    - reevaluation of the reference system
    - reevaluation of the reference year
    - estimated number of wet-weather exceedance days in the critical year at all beach locations, including the reference system(s)
    - final allowable wet weather exceedance days for each beach location
    - reconsideration of whether the number of allowable wet weather exceedance days should be adjusted annually dependant on rainfall
    - the need for clarification or revision of the geometric mean compliance requirements

This monitoring proposal is submitted to fulfill the first of the above listed requirements, the coordinated shoreline monitoring plan for the SMBBB TMDLs to be submitted within 120 days of the effective date.

2.2 Compliance Targets

This Coordinated Shoreline Monitoring Plan proposes 67 locations where compliance with the TMDLs will be measured. Additionally, data collected prior to the compliance deadlines will be used when re-evaluating the TMDLs in four years. A brief discussion on how the Regional Board intends to measure the Responsible Agencies' compliance with the TMDLs' waste load allocations should help the reader to better understand the proposed monitoring program. Detailed information on the TMDLs requirements, including the waste load allocations, can be found in Appendix K.

The TMDLs establish multi-part numeric targets based on three bacteriological analytical parameters: Total coliform density, fecal coliform density and enterococcus density, with density reported in bacteria counts per 100 milliliters of water sampled. These numerical targets and the corresponding waste load allocations have been set based on the Los Angeles Basin Plan objectives for body-contact recreation (REC-1) along with the implementation provisions for these objectives.

The SMBBB TMDLs divide the year into three separate periods for compliance purposes, each with specific requirements. The three periods are as follows:

- summer dry-weather (April 1 – October 31),
- winter dry weather (November 1 – March 31), and
- wet weather.

Wet weather days are those days with rain events of ≥ 0.1 inches of precipitation and the three days following the end of the rain event.

2.2.1 Rolling 30-day Geometric Mean Limits

The Geometric Mean Limits may not be exceeded at any time and must be achieved within three (3) years of the effective date of the TMDL for summer dry weather, within six (6) years of the effective date for winter dry weather, and for wet weather the geometric mean limits must be achieved by the final compliance date in accordance with the implementation plan. These limits are:

- Total coliform density shall not exceed 1,000/100 mL
- Fecal coliform density shall not exceed 200/100 mL
- Enterococcus density shall not exceed 35/100 mL

The geometric mean is defined in Webster's Dictionary as "the n^{th} root of the product of n numbers." Thus, the 30-day geometric mean calculation for the SMBBB TMDLs will be calculated as the 30th root of the product of 30 numbers (the most recent 30 day results). For weekly sampling, the 30 numbers are obtained by assigning the weekly test result to the remaining days of the week. If more samples are tested within the same week, each test result will supersede the previous result and be assigned to the remaining days of the week until the next sample is collected. This rolling 30-day geometric mean must be calculated for each day, regardless of whether a weekly or daily schedule is selected.

2.2.2 Single Sample Limits

- Total coliform density shall not exceed 10,000/100 mL
- Fecal coliform density shall not exceed 400/100 mL
- Enterococcus density shall not exceed 104/100 mL
- Total coliform density shall not exceed 1,000/100 mL if the ratio of fecal-to-total coliform exceeds 0.1

During summer dry weather the single sample limits may not be exceeded at any time and must be achieved within three (3) years of the effective date of the TMDL.

The single sample targets for winter dry weather and year-round wet weather allow a certain number of exceedance days that are established using a dual *reference system/anti-degradation* approach. The allowable number of exceedance days at each monitoring site must be no greater than the number of historical exceedance days measured at a reference beach site that has been selected as being representative of natural background water quality from coastal creeks or runoff from undeveloped areas. *Because the bacterial indicators used as targets in the TMDL are not specific to human sewage, storm water runoff from undeveloped areas may also be a source of elevated bacterial indicator densities. For example, storm water runoff from natural areas may convey fecal matter from wildlife and birds or bacteria from soil. This is supported by the finding that, at the reference beach, the probability of exceedance of the single sample targets during wet weather is 0.22 (*i.e., 22%).[3] The reference system selected by the Regional Board is the Arroyo Sequit Canyon watershed and the corresponding historical monitoring site at Leo Cabrillo Beach.

The maximum allowable number of exceedance days per year based on the reference system during winter dry weather is three days per year based on a daily sampling schedule or one day per year based on weekly sampling.

The maximum allowable number of exceedance days based on the reference system during year-round wet weather is seventeen (17) exceedance days per year under a daily sampling schedule. If a weekly sampling schedule is employed, the number of allowable exceedance days is scaled back accordingly to three (3) exceedance days per year for year-round wet weather.

For compliance monitoring sites that exhibit historically *fewer* exceedance days than the reference beach site, there can be no degradation of water quality and for these compliance monitoring sites the allowable exceedance days will be set equal to the historical exceedance days at the same compliance monitoring site. In effect, certain compliance monitoring sites/watersheds are to be held to a higher standard than others per federal and state anti-degradation requirements.

2.3 Coordinated Monitoring Plan Development

This monitoring plan is developed by the Technical Steering Committee (TSC), which is co-chaired by the County and City of Los Angeles, and consists of representatives from all seven jurisdictional groups plus those responsible agencies within the Malibu Creek and Ballona Creek watersheds[4]. The Ballona Creek and

[3] Attachment A to Resolution No. 2002-022, page 4, Source Analysis

[4] Jurisdictional groups were not created for responsible jurisdictions and agencies in the Ballona Creek and Malibu Creek subwatersheds, because the Regional Board recognized that it would be premature to set interim compliance targets for beaches impacted by discharges originating within these watersheds in light of the fact that separate bacteria TMDLs would strongly affect implementation schedules for these beaches. Nevertheless, the responsible jurisdictions and agencies within these two watersheds are responsible under the SMBBB TMDLs (see letter from Dennis Dickerson, LARWQCB to responsible agencies dated October 28, 2003 for clarification). Therefore, these jurisdictions and agencies are also responsible for submitting a coordinated shoreline monitoring plan for those beaches

Malibu Creek watersheds are designated as Jurisdictional Groups 8 and 9, respectively, in this document for ease of reference.

The TSC originated as a subcommittee of the Ballona Creek Watershed Management Area municipal NPDES permittee group under the Los Angeles County Municipal Storm Water NPDES Permit. More than a year before the TMDLs were finalized, this subcommittee began gathering information and meeting with representatives of the various agencies that had historically conducted shoreline monitoring along the Santa Monica Bay beaches, namely the City of Los Angeles Environmental Monitoring Division (EMD), Los Angeles County Department of Health Services (LACDHS), and Los Angeles County Sanitation Districts (LACSD). The subcommittee met in May 2002 with representatives of the City of Los Angeles, the Los Angeles County Department of Public Works, and Caltrans to assess their plans for monitoring relative to the developing SMBBB TMDLs. The subcommittee held monthly meeting and gradually expanded to include representatives from all seven jurisdictional groups, and was renamed as the Technical Steering Committee for the SMBBB TMDLs. Once the TMDLs were approved by the U.S. EPA in June 2003, RWQCB staff and environmental stakeholder representatives began attending TSC meetings to provide feedback as work on the coordinated monitoring plan progressed. A list of participants in the TSC is provided in Appendix N.

2.4 Requirements of Coordinated Shoreline Monitoring Plan

Both the Dry and Wet Weather TMDLs require that within 120 days of the effective date:

> *"Responsible jurisdictions and responsible agencies must submit coordinated shoreline monitoring plan(s), including a list of new sites and/or sites relocated to the wave wash at which time responsible jurisdictions and responsible agencies will select between daily and weekly shoreline sampling*[5]*. Monitoring sites are those shoreline locations currently monitored by the City of Los Angeles* [EMD]*, County Sanitation Districts of Los Angeles County [LACSD], and the Los Angeles County Department of Health Services [LACDHS] at the time of adoption of this TMDL by the Regional Board.*[6]*"*

The three above-mentioned agencies currently conduct routine monitoring at fifty (50) shoreline locations in Santa Monica Bay[7]. Additionally, the TMDLs also require additional monitoring sites:

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and associated compliance monitoring locations that are primarily impacted by discharges originating within the Ballona Creek and Malibu Creek watersheds.

[5] Resolution 2002-004, Attachment A, Table 7-4.3, Resolution 2002-022, Table 7-4.7

[6] Resolution 2002-022, Attachment A, Table 7-4.6, footnote ***

[7] Resolution 2002-022, Attachment A, Table 7-4.6

> "*For those subwatersheds without an existing shoreline monitoring site, responsible jurisdictions and agencies must establish a shoreline monitoring site if there is measurable flow from a creek or publicly owned storm drain to the beach during dry weather*[8]."

This last sentence is further clarified by the additional statement that responsible jurisdictions and agencies "*shall conduct daily or systematic weekly sampling in the wave wash at all major drains and creeks or at existing monitoring sites at beaches without storm drains or freshwater outlets*.[9]"

The term *wave wash* is defined as the point at which the storm drain or creek empties and the effluent from the storm drain initially mixes with the receiving ocean water, this term is also referred to as "*point zero."* *Major drains* are described in the Wet Weather TMDL as those that are *publicly owned and have measurable flow to the beach during dry weather*[10]. See Appendix K for more details on the TMDLs' requirements for the monitoring plan.

[8] Resolution 2002-022, Attachment A, Table 7-4.7
[9] Resolution 2002-022, Attachment A, page 9, Compliance Monitoring
[10] Resolution 2002-022, Attachment A, page 9, Compliance Monitoring, footnote 7

3.0 COMPLIANCE MONITORING SITES

The section of coastline to be monitored under the Santa Monica Bay Beaches Bacterial TMDLs stretches from the Los Angeles/Ventura county line at the northwest, down to Outer Cabrillo Beach in San Pedro, just south of the Palos Verdes Peninsula. This stretch covers approximately 55 miles of shoreline along Santa Monica Bay. A total of 67 monitoring locations, including both historical[11] and new sampling sites, are being proposed to measure compliance with the TMDLs. In addition to the monitoring sites, routine dry-weather flow observations will also be made at nine locations along the Bay.

The monitoring sites and observation sites are discussed in detail in this section, as well as summarized in Appendix B. Approximate locations of these sites are illustrated in Appendix P. Table 3.1 below breaks down the 67 compliance monitoring locations into historical and new sites:

Table 3.1 Summary of compliance monitoring sites.

TYPE OF SITE	J1	J2	J3	J4	J5	J6	J7	J8	J9	
Historical sites, open beach	1	6	1	0	3	3	8	0	2	23
Historical sites, moved to point zero	7	5	7	1	2	2	0	1	1	27
New sites, open beach	2	0	0	0	0	0	0	0	0	2
New sites, point zero	8	4	1	0	0	1	1	0	0	15
Total	18	15	9	1	5	6	9	1	3	67

These sampling sites have been selected by all responsible agencies within each Jurisdictional Group with guidance from the Technical Steering Committee (TSC) and input from the Regional Board staff. Guidance from the TSC took the form of a set of site selection guidelines listed below. These site selection guidelines were intended as overarching parameters for use by Jurisdictional Groups to establish compliance locations. The guidelines do not consider all the specific conditions that may arise at each and every location along the 55 miles of highly variable geography that is the Santa Monica Bay coastline. Final selection of sampling locations required the exercise of professional judgment at the Jurisdictional Group level.

3.1 Site Selection Guidelines

To assist each jurisdictional group select compliance monitoring sites, the TSC developed the following set of guidelines as a screening tool. Notwithstanding these guidelines, where a publicly owned storm drain was observed to have persistent, measurable dry weather flow, it was considered for monitoring consistent with TMDL requirements. Each of the guidelines was not necessarily relevant or applicable at every monitoring location.

[11] Historical sites are listed in Resolution 2002-022, Attachment A, Table 7-4.5. Six of these sites were not proposed as compliance locations, because LACDHS indicated they were not being monitored at the time of the adoption of the TMDL by the Regional Board. These six sites are DHS001a, DHS003a, DHS005a, DHS010a, DHS104a, and DHS106a.

1. Sampling will be conducted in the wave wash at major drains and creeks or at existing monitoring sites at beaches without storm drains or freshwater outlets.
    a. *Major drains* are those that are publicly owned and have measurable flow to the beach at the wave wash during dry weather. Storm drain pipes having inside diameter of 36 inches or more or its equivalent (discharges from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) [per 40 CFR 122.26(b)(5)] will be evaluated for monitoring.
    b. A *beach* is an accessible area of coastline regularly used for wading and swimming.
2. At least one (1) monitoring site will be located in each subwatershed listed in Attachment A Table 7-4.6 to Resolution No. 2002-022, SMBBB Wet Weather TMDL In addition, at least one (1) monitoring site will be located at a beach impacted by discharges originating within the Ballona Creek watershed and at least one (1) monitoring site will be located at a beach impacted by discharges originating within the Malibu Creek watershed.
3. For subwatersheds lacking a storm drain or freshwater outlet that meets the guidelines for a monitoring location, a monitoring site will be located at the midpoint between its up and down coast boundaries or at the historical site(s).
4. Monitoring locations must have safe access for sampling.
5. Historical monitoring locations listed in Attachment A, Table 7-4.5 to Resolution 2002-002, SMBBB Wet Weather TMDL, except for those described in footnote number 11, shall be used as a starting point to establish compliance monitoring locations.

Notwithstanding the "beach" definition presented here, it is acknowledged that (1) all beaches listed in TMDL are covered by this monitoring plan, (2) all existing sites will continue to be monitored unless they are being relocated to point zero, and (3) there is at least one monitoring site in each subwatershed identified in the TMDL.

Each of the seven Jurisdictional Groups conducted storm drain and beach surveys and consulted Santa Monica BayKeeper's list of drains potentially discharging into Santa Monica Bay as part of the evaluation process. The final list of compliance monitoring sites has been selected based on the TMDLs and these guidelines; these sites are described in Sections 3.3 through 3.10 of this plan and summarized in Appendix B.

Should additional "major drains" be identified after approval of this plan, they will be evaluated for routine monitoring per TMDL requirements and if appropriate, added to this coordinated monitoring plan. Similarly, a monitoring site may be removed from this plan if it is shown through regular observations that the storm drain in question does not qualify as a "major drain" as defined by the TMDL.

3.2 Observation Sites

In addition to the compliance monitoring sites, this plan also includes nine locations where weekly or monthly dry-weather flow observations will be made. One year following the start of observations, the Regional Board will determine whether each of the nine locations warrants being added to the current list of compliance monitoring sites. The nine observation sites are listed in Table 3.2 below, and a discussion of each can be found in the subsequent sections.

Table 3.2. Summary of observation sites.

OBSERVATION SITE ID	SM BAYKEEPER DRAIN ID	OUTLET SIZE	JURISDICTIONAL GROUP
SMB-O-1	S1D40	Creek type drain	JG1
SMB-O-2	S2D140	70 in.	JG1
SMB-O-3	S3D280	36 in.	JG1
SMB-O-4	S6D50	24 in.	JG2
SMB-O-5	S6D90	46 in.	JG2
SMB-O-6	S10D20	24 in.	JG5
SMB-O-7	S13D40	36 in.	JG6
SMB-O-8	S14D70	32 in.	JG6
SMB-O-9	S15D40	72 in.	JG7

3.3 Jurisdiction 1

Setting

Jurisdiction 1 is comprised of seven responsible agencies: County of Los Angeles (lead agency), County of Ventura, California Department of Parks and Recreation, Caltrans, and Cities of Los Angeles, Malibu, and Calabasas. The jurisdiction covers the entire Malibu Watershed Management Area as defined by the Regional Board, minus the Nicholas Canyon watershed (Jurisdiction 4) and Malibu Creek watershed. The combined size of the 16 subwatersheds in Jurisdiction 1 is approximately 47,338 acres; however, 5,997 acres of State park land are considered by the Regional Board to be background, leaving 41,341 acres of effective watershed area. The effective watershed area falls under the jurisdiction of the following responsible agencies:

County of Los Angeles (lead agency)	29,838 acres
City of Malibu	9,799 acres
County of Ventura	905 acres
Caltrans	497 acres
California Department of Parks and Recreation (beaches only)	150 acres
City of Calabasas	131 acres
City of Los Angeles	21 acres

Compliance Locations

Jurisdiction 1 has 18 sites where compliance will be measured. Of the 18, eight are existing monitoring sites currently sampled by the City of Los Angeles and the Department of Health Services, the remaining ten are new sites. Jurisdiction 1 also has three observation sites. Approximate locations of the monitoring and observation sites are shown in Figures 2 through 4 in Appendix P. A description of each compliance location and justification for its selection follows:

Site Id: SMB-1-1	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS010	**Subwatershed:** Arroyo Sequit	**BayKeeper Id:** sad 50
Comments: This relocated site is situated at the mouth of Arroyo Sequit Creek on Leo Carrillo State Beach. Relocation is required because the creek periodically discharges to the ocean during dry weather. LACDHS has agreed to move its existing station DHS010 to point zero. See Thomas Guide page 625 H6.		

Site Id: SMB-1-2	**Status:** New	**Type:** Open Beach
Historical Site Id: N/A	**Subwatershed:** Los Alisos	**BayKeeper Id:** N/A
Comments: This new site is situated on El Pescador State Beach. The creeks likely to impact water quality at this monitoring site are Lachusa Creek (BayKeeper ID "sad320") and Los Aliso Creek. Lachusa Creek exhibits a small, but consistent flow to the ocean during dry weather, but the location can not be accessed for sampling. See Thomas Guide page 626 D7.		

Site Id: SMB-1-3	**Status:** New	**Type:** Open Beach
Historical Site Id: N/A	**Subwatershed:** Encinal	**BayKeeper Id:** N/A
Comments: This new site is situated on El Matador State Beach at base of access stairs. There are no creeks or historical monitoring sites in the Encinal Canyon subwatershed. See Thomas Guide page 626 F7.		

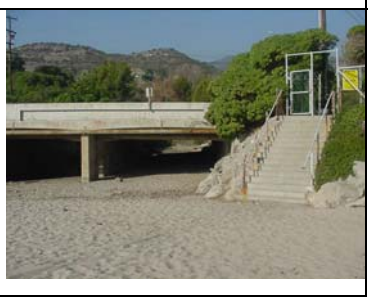
Site Id: SMB-1-4	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS008	**Subwatershed:** Trancas	**BayKeeper Id:** sad920
Comments: The existing site DHS008 is moved to the wave wash of Trancas Creek on Broad Beach year-round. See Thomas Guide page 667 grid A1. Access this site through the Zuma Beach entrance. The TMDL also listed another existing site at Broad Beach named DHS010a, which through discussions with LACDHS was discovered not to be a currently monitored site for at least the past 12 years and therefore is not proposed as a compliance monitoring site in this plan.		

Site Id: SMB-1-5	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS007	**Subwatershed:** Zuma	**BayKeeper Id:** sad1070
Comments: The existing site DHS007 is moved to the mouth of Zuma Creek at Zuma Beach year-round. See Thomas Guide page 667 C3.		

Site Id: SMB-1-6	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Ramirez	**BayKeeper Id:** S1D30
Comments: This new site is situated at the wave wash of "Walnut Creek." Access to this site is through private property and requires prior approval from property owners. See Thomas Guide page 667 G3.		Photograph unavailable

Site Id: SMB-O-1	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Ramirez	**BayKeeper Id:** S1D40
Comments: This observation site is situated near Little Point Dume. To access the site, head north on PCH. Turn right on Zumirez Drive. The access gate is located at the end of the street; an access card is required to enter. This site is located between compliance monitoring sites S1D30 and S1D50. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site. See Thomas Guide page 667 G3.		

Site Id: SMB-1-7	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS006	**Subwatershed:** Ramirez	**BayKeeper Id:** s1d50
Comments: The existing site DHS006 is moved to the mouth of Ramirez Canyon at Paradise Cove Pier. The photograph shows runoff from Ramirez Canyon, with the pier in the background. To access the site, turn left onto Paradise Cove Road from northbound Pacific Coast Highway. See Thomas Guide page 667 G2.		

Site Id: SMB-1-8	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Escondido	**BayKeeper Id:** s1d150
Comments: This is a new site located at the wave wash of Escondido Creek, just east of Escondido State Beach and west of the Malibu Cove Colony. See Thomas Guide page 668 A1.		

Site Id: SMB-1-9	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS005	**Subwatershed:** Latigo	**BayKeeper Id:** s1d240
Comments: The existing station DHS005 in front of the Tivoli Bay Villa Treatment Plant (pink building on the right side of the photograph) is moved to the wave wash of Latigo Canyon (box structure on the left side of the photograph). See Thomas Guide page 668 B1.		

Site Id: SMB-1-10	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Solstice	**BayKeeper Id:** s1d290
Comments: This new site is situated at the mouth of Solstice Creek at Dan Blocker County Beach. The creek exhibits small, but consistent flows during dry weather. There are no existing monitoring sites on this beach. Access to the site is located across the street from 26025 Pacific Coast Highway. See Thomas Guide page 628 C7.		

Site Id: SMB-1-11	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS004	**Subwatershed:** Corral	**BayKeeper Id:** s1d320
Comments: The historical site DHS004 on Puerco State Beach is moved to the wave wash of this un-named creek. See Thomas Guide page 628 D7.		Photograph unavailable

Site Id: SMB-O-2	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Corral	**BayKeeper Id:** S2D140
Comments: This site is located west of S2D170 (Marie Canyon) also within the Corral Canyon subwatershed. The site can be accessed through public access stairway next to 24822 Malibu Road. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site. See Thomas Guide page 628 G7.		

Site Id: SMB-1-12	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Corral	**BayKeeper Id:** s2d170
Comments: This new site is situated in front of the Marie Canyon storm drain on Puerco Beach. To access the site, turn right onto Malibu Road from Stuart Ranch Road/Web Way. The storm drain outlet is located under 24572 Malibu Road; limited public parking is available on Malibu Road. See Thomas Guide page 628 G7.		

Site Id: SMB-1-13	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Carbon	**BayKeeper Id:** s3d10
Comments: This new site is situated in front of Sweetwater Canyon on Carbon Beach. See Thomas Guide page 629 B6.		

Site Id: SMB-1-14	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Las Flores	**BayKeeper Id:** s3d150
Comments: This new site is situated at the mouth of Las Flores Creek on Las Flores State Beach. Although the creek does not exhibit dry-weather flows, a new site is added at this location because the existing monitoring location noted in the TMDL, DHS001a, through conversations with LACDHS was found to be a site that is not currently monitored and has not been for at least the past 12 years. See Thomas Guide page 629 G7.		Photograph unavailable

Site Id: SMB-O-3	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Piedra Gorda	**BayKeeper Id:** s3d280
Comments: This observation site is a 36" storm drain situated just west of Moonshadows Restaurant. Access is between 20340 PCH and Moonshadows Restaurant. High tide may impede access to this location. The public access is currently closed due to construction. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-1-15	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS001	**Subwatershed:** Piedra Gorda	**BayKeeper Id:** N/A
Comments: Same as existing station DHS001 on Big Rock Beach, located in front of the stairs adjacent to 19948 Pacific Coast Highway. No new sites are added in this watershed due to lack of creeks or storm drains exhibiting dry-weather flows. See Thomas Guide page 629 J6.		Photograph unavailable

Site Id: SMB-1-16	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Pena	**BayKeeper Id:** s4d60
Comments: This is a new site at the mouth of Pena Creek on Las Tunas County Beach. A new site is proposed at this location despite the lack of observed dry-weather flows from the creek because this subwatershed does not have an existing shoreline sampling site. See Thomas Guide page 630 B6.		Photograph unavailable

Site Id: SMB-1-17	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Tuna	**BayKeeper Id:** s5d175
Comments: This is a new site at the wave wash of Tuna Canyon. Although Tuna Canyon does not discharge onto a public beach, this location is added to fulfill the TMDLs' requirement of having at least one compliance monitoring location in every coastal subwatershed. See Thomas Guide page 630 C6.		Photograph unavailable

Site Id: SMB-1-18	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S2	**Subwatershed:** Topanga	**BayKeeper Id:** s5d315
Comments: The existing station S2 is moved to the wave wash of Topanga Canyon on Topanga State Beach. See Thomas Guide page 630 D6.		

3.4 Jurisdiction 2

Setting

Jurisdiction 2 is comprised of six responsible agencies: City of Los Angeles (lead agency), County of Los Angeles, Caltrans, California Department of Parks and Recreation, and cities of Santa Monica and El Segundo. The jurisdiction encompasses the Castle Rock, Dockweiler, Venice Beach, Pulga Canyon, Santa Monica Canyon, and Santa Ynez watersheds as defined by the Regional Board. The combined size of the six subwatersheds in Jurisdiction 2 is approximately 18,590 acres. The area breakdown by responsible agency is as follows:

City of Los Angeles (lead agency)	16,154 acres
City of El Segundo	1,124 acres
California Department of Parks and Recreation (beaches only)	462 acres
County of Los Angeles	435 acres
City of Santa Monica	256 acres
Caltrans	159 acres

Compliance Locations

Jurisdiction 2 has 15 sites where compliance will be measured; of the 15, three are new, and the remaining 12 are existing beach monitoring locations currently sampled

by the City of Los Angeles or the Los Angeles County Department of Health Services. Five of the 12 existing stations will be moved to the wave wash of a fresh water outlet. Approximate locations of these sites are shown in Figures 5 and 6 in Appendix P. A description of each compliance location and justification for its selection follows:

Site Id: SMB-2-1	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Castlerock	**BayKeeper Id:** s5d480
Comments: This is a new site located in front of the Castlerock storm drain, or also known as Parker Mesa storm drain, which is a 60"x 96" box structure. A low-flow diversion for this storm drain is scheduled to be constructed by Summer 2006. See Thomas Guide page 630 F6.		

Site Id: SMB-2-2	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Santa Ynez	**BayKeeper Id:** s6d30
Comments: A second new site is located at the mouth of the Santa Ynez storm drain, which is a 72"x 240" box outlet. The County of Los Angeles is planning to construct a low-flow diversion for this drain by the Summer of 2006. See Thomas Guide page 630 G6.		

Site Id: SMB-2-3	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS101	**Subwatershed:** Santa Ynez	**BayKeeper Id:** N/A
Comments: The is an open beach location on Will Rogers State Beach, at 17200 Pacific Coast Hwy., Pacific Palisades , 1/4 mile east of Gladstone's restaurant parking lot and the Sunset storm drain. See Thomas Guide page 630 H6.		Photograph unavailable

Site Id: SMB-O-4	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Santa Ynez	**BayKeeper Id:** s6d50
Comments: This is a 24" corrugated metal pipe near Gladstones restaurant and site SMB-2-3 (DHS101). One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-O-5	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Santa Ynez	**BayKeeper Id:** s6d90
Comments: The Marquez storm drain is a 46" concrete drain on Sunset Beach, a few hundred feet east of the observation site SMB-O-4. Lifeguard tower #4 is shown in the accompanying photograph. Access is just north of the drain at the wooden stairs. This drain can also be observed from the street. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-2-4	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S3	**Subwatershed:** Santa Ynez	**BayKeeper Id:** s6d109, 110
Comments: The historical sampling site S3 is moved to the wave wash of Pulga storm drain on Will Rogers State Beach. This outlet structure is made up of two 72" x 96" boxes. A low-flow diversion structure is currently under construction and is expected to become operational in Summer 2004. See Thomas Guide page 630 H6.		

Site Id: SMB-2-4	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS103	**Subwatershed:** Pulga Canyon	**BayKeeper Id:** s6d140
Comments: LACDHS has agreed to moved its historical Location DHS103 to the wave wash of the Temescal Canyon storm drain on Will Rogers State Beach. This outlet structure is a 72" x 72" outlet box. See Thomas Guide page 630 J6.		

Site Id: SMB-2-5	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS102	**Subwatershed:** Santa Ynez	**BayKeeper Id:** s6d100
Comments: The Bay Club storm drain outlet is located on Will Rogers State Beach, in front of the Bel Air Bay Club, located at 16801 Pacific Coast Highway., Pacific Palisades (at the chain link fence just east of the Bay Club). The Bay Club has granted permission for water sampling at this location. See Thomas Guide page 630 H6.		Photograph unavailable

Site Id: SMB-2-7	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S4	**Subwatershed:** S.M. Canyon	**BayKeeper Id:** s6d230
Comments: The historical sampling site S4 is moved to the wave wash of Santa Monica Canyon. The outletstructure is a 480" x 144" channel. A low-flow diversion has been constructed for this channel. See Thomas Guide page 631 B7.		

Site Id: SMB-2-8	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS108	**Subwatershed:** Venice Beach	**BayKeeper Id:** N/A
Comments: This location is located on Venice Beach, Venice Pier, 50 yards south of the pier. See Thomas Guide page 671 H7 .		Photograph unavailable

Site Id: SMB-2-9	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS109	**Subwatershed:** Venice Beach	**BayKeeper Id:** N/A
Comments: The location is located at Venice Beach at Topsail Street, Venice. No new sites were added in this watershed due to the lack of creeks or storm drains exhibiting dry weather flows. See Thomas Guide page 701 J2.		Photograph unavailable

Site Id: SMB-2-10	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S11	**Subwatershed:** Dockweiler	**BayKeeper Id:** s9d10
Comments: The historical sampling site S11 is moved to the wave wash of Culver storm drain. N33 57.24, W118 27.05. See Thomas Guide page 702 A3.		

Site Id: SMB-2-11	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Dockweiler	**BayKeeper Id:** s9d50
Comments: A new site added at the mouth of the North Westchester storm drain. The outlet structure is a 120" x 144" concrete box structure as see in the photograph. A low-flow diversion structure is currently under construction and is expected to become operational in Summer 2004. See Thomas Guide page 702 B4.		

Site Id: SMB-2-12	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS110	**Subwatershed:** Dockweiler	**BayKeeper Id:** N/A
Comments: The location is located on Dockweiler Beach, World Way extended, Playa del Rey, about 0.15 miles south of maintenance building, south of jetty. See Thomas Guide page 702 G2.		Photograph unavailable

Site Id: SMB-2-13	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S12	**Subwatershed:** Dockweiler	**BayKeeper Id:** s9d70
Comments: The location is located at an existing City monitoring site at the Imperial Highway storm drain. The outlet structure is across from lifeguard tower 56 and is an 84" x 120" box. A low-flow diversion has been constructed for this drain. See Thomas Guide page 702 C7.		

Site Id: SMB-2-14	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS111	**Subwatershed:** Dockweiler	**BayKeeper Id:** N/A
Comments: The location is located on Dockweiler Beach, opposite of Hyperion plant, Playa del Rey (at the one mile outfall pipe). See Thomas Guide page 702 C7.		Photograph unavailable

Site Id: SMB-2-15	**Status:** Existing	**Type:** Point Zero
Historical Site Id: DHS112	**Subwatershed:** Dockweiler	**BayKeeper Id:** N/A
Comments: DHS112 is located on Dockweiler Beach, at the outlet of Grand Ave. storm drain, which is an 18" drain with no observed dry weather flows. Discharges from the Chevron Refinery in El Segundo may potentially influence bacterial counts at this location. See Thomas Guide page 732 D2.		Photograph unavailable

3.5 Jurisdiction 3

Setting

Jurisdiction 3 is comprised of five responsible agencies: City of Santa Monica (lead agency), City of Los Angeles, California Department of Parks and Recreation, Caltrans, and the County of Los Angeles. The jurisdiction covers a small section from Santa Monica Canyon and north of the Santa Monica Freeway at the ocean to north of Marina del Rey, i.e., Venice. The Santa Monica subwatershed, which makes up Jurisdiction 3, is approximately 9,182 acres. The area breakdown by responsible agency is as follows:

City of Santa Monica (lead agency)	4,664 acres
City of Los Angeles	4,308 acres
California Department of Parks and Recreation (beaches only)	163 acres
Caltrans	47 acres
County of Los Angeles	0 acres

Compliance Locations

Jurisdiction 3 has nine sites where compliance will be measured; of the nine, one is new, and the remaining eight are existing monitoring locations currently sampled by the City of Los Angeles or the Department of Health Services. All but one of the existing monitoring locations is moved to the wave wash of a fresh water outlet. Approximate locations of these sites are show in Figure 7 in Appendix P. A description of each compliance location and justification for its selection follows:

Site Id: SMB-3-1	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS104	**Subwatershed:** Santa Monica	**BayKeeper Id:** s6d232
Comments: Montana Storm Drain, located at the end of Montana Avenue on Santa Monica State Beach, adjacent to Pacific Coast Highway. LACDHS has agreed to move its station DHS104 to this new location at the wave wash year-round. This storm drain is buried from June until the first large rain event. This location is scheduled to have a diversion installed in Fall of 2005 to divert dry-weather runoff into the sanitary sewer system. See Thomas Guide page 671 C1.		Photograph unavailable

Site Id: SMB-3-2	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS105	**Subwatershed:** Santa Monica	**BayKeeper Id:** s6d235
Comments: Wilshire Storm Drain, located at the end of Wilshire Boulevard on Santa Monica State Beach, Adjacent to Pacific Coast Highway. LACDHS has agreed to move its station DHS105 to this new location at the wave wash year-round. This storm drain is buried from June to the first large rain event. This location scheduled to have a diversion installed in Fall of 2005 to divert dry-weather runoff into the sanitary sewer system. See Thomas Guide page 671 D2 .		

Site Id: SMB-3-3	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S5	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d5
Comments: Santa Monica Pier Storm Drain: This existing site is situated under the Pier on Santa Monica State Beach. City of Los Angeles tests water quality south of the end of the Pier. This storm drain is generally blocked from June to the first large storm event. It also has a diversion to the Santa Monica Urban Runoff Treatment Facility to minimize flows during winter dry weather. See Thomas Guide page 671 E3.		Photograph unavailable

Site Id: SMB-3-4	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S6	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d10
Comments: This site is situated at the wave wash of Pico-Kenter Storm Drain. The Pico-Kenter Storm Drain is generally blocked by sand from June to the first large storm event. It also has a diversion to the Santa Monica Urban Runoff Treatment Facility to minimize flows during winter dry weather. See Thomas Guide page 671 E3.		

Site Id: SMB-3-5	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S7	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d20
Comments: This site is situated at the wave wash of Ashland Storm Drain. Sampling is proposed at the wave wash because dry-weather flow is observed periodically from this storm drain, despite an existing diversion structure. The County is currently designing a new diversion structure for this storm drain; it is scheduled to become operational in Summer 2005. See Thomas Guide page 671 F5.		

Site Id: SMB-3-6	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d50
Comments: This is a new site at the wave wash of Rose Avenue Storm Drain. The storm drain outlet is located at the end of Rose Avenue on Venice Beach. The County is currently designing a diversion structure for this storm drain; it is scheduled to become operational in Summer 2005. See Thomas Guide page 671 F5.		

Site Id: SMB-3-7	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS107	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d70
Comments: This site is situated at the wave wash of Brooks storm drain. LACDHS has agreed to move its station DHS107 to the wave wash of the storm drain year-round. The storm drain outlet is located at the end of Brooks Ave on Venice Beach. The existing non-operational diversion structure is scheduled to be upgraded by the end of 2004. See Thomas Guide page 671 G6.		

Site Id: SMB-3-8	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S8	**Subwatershed:** Santa Monica	**BayKeeper Id:** s7d80
Comments: This site is an existing site currently monitored by the City of Los Angeles at Venice Pavillion and outlets at the end of Windward Ave. See Thomas Guide page 671 G6.		

Site Id: SMB-3-9	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS106	**Subwatershed:** Santa Monica	**BayKeeper Id:** N/A
Comments: This site is an existing site at Santa Monica State Beach at Strand St, in front of the restrooms. See Thomas Guide page 671 F4.		Photograph unavailable

3.6 Jurisdiction 4

Setting

Jurisdiction 4 is comprised of three responsible agencies: City of Malibu (primary), County of Los Angeles, and Caltrans. The Jurisdiction covers the Nicholas Canyon watershed as defined by the Regional Board. The limits of this area range from the southern edge of Leo Cabrillo State Beach to Los Aliso Creek. The Nicholas Canyon subwatershed encompasses approximately 1,212 acres, which fall under the jurisdiction of the responsible agencies as follows:

City of Malibu (lead agency)	961 acres
County of Los Angeles	232 acres
Caltrans	19 acres

Compliance Location

Jurisdiction 4 has one site where compliance will be measured. The approximate location of this site is shown in Figure 8 in Appendix P. The site is an existing beach monitoring locations currently sampled by LACDHS.

Site Id: SMB-4-1	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS009	**Subwatershed:** Nicholas	**BayKeeper Id:** N/A
Comments: The historical station DHS009 on Nicholas Beach is moved to the wave wash of San Nicholas Canyon. This is site mug114 in the State Water Resources Control Board report "Discharges into State Water Quality Protection Areas". See Thomas Guide page 626 B6.		

3.7 Jurisdiction 5

Setting

Jurisdiction 5 is comprised of five responsible agencies: City of Manhattan Beach (lead agency), City of El Segundo, City of Hermosa Beach, County of Los Angeles, and Caltrans. The jurisdiction covers the Hermosa subwatershed as defined by the Regional Board. The limits of this area range from the north boundary of Manhattan Beach to just south of the Hermosa Beach Pier. The Hermosa subwatershed encompasses approximately 2,718 acres. The area breakdown by responsible agency is as follows:

Manhattan Beach (lead agency)	1,971 acres
Hermosa Beach	602 acres
County of Los Angeles	100 acres
Caltrans	24 acres
El Segundo	21 acres

Compliance Locations

Jurisdiction 5 has five sites where compliance will be measured. Of the five, two are historical sites being moved to point zero, and the remaining three are unmoved historical beach monitoring locations sampled by the City of Los Angeles or LACDHS. The approximate locations of these sites are shown in Figure 9 in Appendix P. A description of each compliance location and justification for its selection follows:

Site Id: SMB-5-1	**Status:** Existing	**Type:** Open Beach
Historical Site Id: S13	**Subwatershed:** Hermosa	**BayKeeper Id:** N/A
Comments: This is an existing site monitored by the City of Los Angeles at the end of 40th Street in Manhattan Beach. This site is monitored because it is a located between 36th and 45th Streets at the frequently visited El Porto beach. There are no major drains at this location. All of the boxes that discharge to the beach are small area drains that only handle runoff from the El Porto parking lot. Discharges from the Chevron Refinery in El Segundo may potentially influence bacterial counts at this location. See Thomas Guide page 732 E4.		

Site Id: SMB-O-6	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Hermosa	**BayKeeper Id:** s10d20
Comments: This is a 24" storm drain on Manhattan Beach, a couple of hundred feet north of SMB-5-2 (DHS113). One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-5-2	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS113	**Subwatershed:** Hermosa	**BayKeeper Id:** s10d30
Comments: This relocated site is situated at the terminus of the 28th Street drain in Manhattan Beach. The outlet is a 6' wide by 4' high box structure and has a drainage area of 1,473 acres. LACDHS has agreed to move its station DHS113 to the wave wash of this drain year-round. A low-flow diversion structure for this storm drain is currently under construction and is expected to become operational in Summer 2004. See Thomas Guide page 732 E5.		

Site Id: SMB-5-3	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S14	**Subwatershed:** Hermosa	**BayKeeper Id:** s11d002
Comments: This is a relocated historical site monitored by the City of Los Angeles at the Manhattan Beach pier. There are two storm drain outfalls at this location. Both drains are less than 36" in diameter, but southern one (s11d002), at the wave wash of which the sample is to be collected, has a drainage area of 70 acres. This drain is equipped with a low-flow diversion that diverts dry-weather flow to the sanitary sewer system. See Thomas Guide page 732 F6.		

Site Id: SMB-5-4	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS114	**Subwatershed:** Hermosa	**BayKeeper Id:** N/A
Comments: This is an existing site monitored by LACDHS at an open beach near 26th Street on Hermosa Beach. No new site is proposed because no dry weather flows were observed during field surveys. See Thomas Guide page 762 F1.		

Site Id: SMB-5-5	**Status:** Existing	**Type:** Open Beach
Historical Site Id: S15	**Subwatershed:** Hermosa	**BayKeeper Id:** N/A
Comments: This is an existing site monitored by the City of Los Angeles at the Hermosa Beach pier. No new site is proposed because no dry weather flows were observed during field surveys. See Thomas Guide page 762 G2.		

3.8 Jurisdiction 6

Setting

Jurisdiction 6 is comprised of six responsible agencies: Cities of Manhattan Beach, Hermosa Beach, Redondo Beach (lead agency) and Torrance, County of Los Angeles, and Caltrans. The jurisdiction covers the Redondo sub-watershed as defined by the Regional Board. The limits of this area range from just north of the south boundary of Hermosa Beach and just south of Artesia Blvd. in Redondo Beach to the south city limits of Torrance. The combined size of the jurisdiction is approximately 5,377 acres. The area breakdown by responsible agency is as follows:

City of Redondo Beach (lead agency)	2,632 acres
City of Torrance	2,289 acres
City of Hermosa Beach	299 acres
County of Los Angeles	72 acres
City of Manhattan Beach	52 acres
Caltrans	42 acres

Compliance Locations

Jurisdiction 6 has five sites where compliance will be measured. Of the five, one is new, two are historical sites moved to point zero, and the remaining two are historical sties not being moved. The approximate locations of these sites are shown in Figure 10 in Appendix P. A description of each compliance location and justification for its selection follows:

Site Id: SMB-6-1	**Status:** Moved	**Type:** Point Zero
Historical Site Id: DHS115	**Watershed:** Redondo	**BayKeeper Id:** s12d30
Comments: Herondo storm drain, which drains the most northerly sub-watershed of Jurisdiction Group 6. This outlet is observed to have significant flow during dry weather. The County has constructed a dry-weather diversion that diverts a part of the dry-weather flow. The outlet is a 14' by 12' box structure and has a drainage area of 2,823 acres. LACDHS has agreed to move its station DHS115 to this new location. See Thomas Guide page 762 G4.		

Site Id: SMB-O-7	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Redondo	**BayKeeper Id:** s13d40
Comments: This is the outlet of a 36" storm drain under the Redondo Beach Pier. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-6-2	**Status:** Existing	**Type:** Open Beach
Historical Site Id: S16	**Subwatershed:** Redondo	**BayKeeper Id:** N/A
Comments: This is an existing site monitored by the City of Los Angeles near the Redondo Beach pier. Two storm drain outfalls drain to the beach at this monitoring location however, neither outlet meets the definition of a major drain. The site is located approximately 100 yards south of the pier in front of life guard station shown in the accompanying photograph. See Thomas Guide page 762 H5.		

Site Id: SMB-6-3	**Status:** New	**Type:** Point Zero
Historical Site Id: N/A	**Subwatershed:** Redondo	**BayKeeper Id:** S14d30
Comments: The outlet is located on the projection of Sapphire Street. This outlet has a small amount of dry-weather flow. The outlet is a 4' x 4' box structure with a watershed area of 148 acres. This site is influenced by tidal conditions and therefore will subject to special sampling requirements described in Section 4.1 Sampling Schedule. See Thomas Guide page 762 H6.		

Site Id: SMB-6-4	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS116	**Subwatershed:** Redondo	**BayKeeper Id:** N/A
Comments: This is an existing site monitored by LACDHS approximately 120 feet north of the Topaz groin. There are no storm drain outlets near this site. See Thomas Guide page 762 H6.		

Site Id: SMB-6-5	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S17	**Subwatershed:** Redondo	**BayKeeper Id:** s14d50
Comments: This is a relocated historical site. The original location, City of Los Angeles' station S17 at Avenue I, has been moved to the wave wash of a 48"-storm drain located on the projection of Avenue I. The storm drain, which drains 212 acres, exhibits a small amount of dry-weather flow. During non-raining periods, the outlet is covered with sand and is marked by a yellow pole. A low-flow diversion for this storm drain is scheduled to be constructed by Summer 2005. See Thomas Guide page 792 H1.		

Site Id: SMB-O-8	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Redondo	**BayKeeper Id:** s14d70
Comments: This is the outlet of a 32" storm drain on Torrance Beach near Via Riviera. The parking lot shown in the accompanying photograph is located at the end of S. Esplanade Ave. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site.		

Site Id: SMB-6-6	**Status:** Existing	**Type:** Open Beach
Historical Site Id: S18	**Subwatershed:** Redondo	**BayKeeper Id:** N/A
Comments: This open beach site is currently monitored by the City of Los Angeles Bureau of Sanitation in Malaga Cove. See Thomas Guide page 792 H3.		Photograph unavailable

3.9 Jurisdiction 7

Setting

Jurisdiction 7 has unique characteristics that differentiate it from other Santa Monica Bay Watershed groups. Many of the storm drains on the Palos Verdes Peninsula outfall along steep bluff faces up to one hundred feet high. Some storm drains outfall at rocky points without safe access to the shoreline.

Jurisdiction 7 is comprised of six responsible agencies: the cities of Rancho Palos Verdes (lead agency), Palos Verdes Estates, Los Angeles, Rolling Hills, Rolling Hills Estates, and County of Los Angeles. The Jurisdiction covers a single subwatershed of the Palos Verdes Peninsula encompassing approximately 10,308 acres. The area breakdown by responsible agency is as follows[12]:

[12] July 25, 2003 letter from Dennis A. Dickerson, Executive Officer, LARWQCB to Responsible Jurisdictions and Responsible Agencies under the Santa Monica Bay Beaches Bacteria TMDLs. In addition, this listing reflects the redrawing of the Jurisdiction 6 and 7 boundary, which moves the City of Redondo Beach, City of Torrance, and Caltrans from Jurisdiction 7 to Jurisdiction 6.

City of Rancho Palos Verdes (lead agency)	5,837 acres
City of Palos Verdes Estates	2,790 acres
City of Los Angeles	957 acres
City of Rolling Hills	426 acres
City of Rolling Hills Estates	298 acres
County of Los Angeles	48 acres

Jurisdiction 7 employed a number of resources and techniques to identify, locate and evaluate major drains in accordance with the Guidelines for Establishing Monitoring Site Locations. These included:

- Reviewing available storm drain maps
- Reviewing the Dry Weather Characterization Study prepared by the County Sanitation Districts of Los Angeles
- Conducting field reconnaissance where safe access could be made
- Discussions with field personnel at City of Los Angeles EMD
- Examining aerial photographs of the Palos Verdes coastline

Compliance and Observation Locations

Jurisdiction 7 has identified nine sites where compliance will be monitored . Of the nine compliance monitoring sites, one is new and eight are historical shoreline monitoring locations. Jurisdiction 7 also has one observation site, which will be observed weekly for dry-weather flow. The approximate locations of the JG7 compliance and observation sites are shown in Figure 11 in Appendix P. A description of each compliance monitoring site and basis for selection follow:

Site Id: SMB-7-1	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSDM	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This Los Angeles County Sanitation District's (LACSD) historical monitoring site was proposed for relocation to the zero point of the stream where it outfalls through a drainage control structure immediately adjacent and up coast of the Palos Verdes Beach Club, however for safety reasons LACSD does not advise moving the monitoring location closer to the mouth. This open beach site is located at 300 Paseo Del Mar, Palos Verdes Estates. To access the site, turn from Paseo Del Mar into the Malaga Cove International School parking lot. Follow the asphalt footpath down to the base of the trail. Sample is collected at the base of the Malaga Cove sign. See Thomas Guide page 792 grid G3.		

Site Id: SMB-O-9	**Status:** Observation	**Frequency:** TBD
Historical Site Id: N/A	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** s15d40
Comments: This site is located at 300 Paseo Del Mar, Palos Verdes Estates. To access the site, turn from Paseo del Mar into the Malaga Cove International School parking lot. Follow the asphalt footpath down to base of the trail. The stormdrain is located approximately 50 yards southwest of the Palos Verdes Swim/Beach Club. One year after the initiation of the flow observation program, the Regional Board will evaluate the data to determine whether this location should be added as a compliance monitoring site. See Thomas Guide Page 792 Grid G3.		

Site Id: SMB-7-2	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSDB	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located at Bluff Cove: 600 Paseo del Mar, Palos Verdes Estates. To access the site, park on the 700 block of Paseo del Mar and follow the footpath down to the base of the trail. Sample is collected where the path meets the shoreline. See Thomas Guide page 792 grid G4.		

Site Id: SMB-7-3	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD1	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is at 7200 Palos Verdes Drive South, Rancho Palos Verdes, located along the private beach at Long Point. To access the site, turn from Palos Verdes Drive South into the Long Point driveway and follow the left perimeter of the parking lot to the southeast corner. By foot, follow the pathway past the chain link fence down to the shoreline. Sample is collected directly in front of the concrete building. See Thomas Guide page 822 grid H5.		

Site Id: SMB-7-4	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD2	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located at 6000 Palos Verdes Drive South, Rancho Palos Verdes. To access the site, turn from Palos Verdes Drive South into the locked gate driveway. Alternatively, turn into the Abalone Cove parking lot approximately 100 yards northwest of the site. Follow the unpaved road down past the nursery school to the lifeguard tower. Next to the lifeguard tower is a stairway that leads directly onto the shoreline where the sample is collected. See Thomas Guide page 822 grid H5.		

Site Id: SMB-7-5	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD3	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located along the private beach fronting the Portuguese Bend Club at 4100 Palos Verdes Drive South, Rancho Palos Verdes. To access this site, turn from Palos Verdes Drive South into the Portuguese Bend Club driveway. Bear right once past the guard and take Yacht Harbor Drive past the paddle tennis courts directly in front of the parking lot where sample is collected. See Thomas Guide page 823 grid C6.		

Site Id: SMB-7-6	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD5	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located at White's Point/Royal Palms County Beach: 1801 Paseo Del Mar, San Pedro. To access this site, turn from Paseo Del Mar into the facility and follow the driveway past the kiosk down to the parking lot. Walk to the right of the lifeguard tower. Sample is collected just to the right of the jetty. See Thomas Guide page 853 grid G1.		

Site Id: SMB-7-7	**Status:** New	**Type:** Point Zero
Historical Site Id: -NA-	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This new compliance monitoring site is located approximately midway between White Point County Beach and the Wilder Annex, at the wave wash of storm drain outfall shown in the photograph. To access the site, park on South Paseo Del Mar, enter the gated driveway and follow it down. At the end of the road, take the footpath down and located on the left side is the concrete drain. Sample is collected where the stormdrain flow meets, or would meet, the waves. When safety is a concern, sample is collected up to 10 meters down current. See Thomas Guide page 853 grid H1.		

Site Id: SMB-7-8	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD6	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located at the Point Fermin/Wilder Annex: 825 Paseo Del Mar, San Pedro. To access the site, park on the South Paseo Del Mar adjacent to Meylor Street. Follow the driveway past the public restroom to the bottom of the lot, go down the steps to another footpath that leads to a stairway. Sample is collected at the bottom of the stairway. See Thomas Guide page 854 grid B2.		

Site Id: SMB-7-9	**Status:** Existing	**Type:** Open Beach
Historical Site Id: LACSD7	**Subwatershed:** Palos Verdes Peninsula	**BayKeeper Id:** N/A
Comments: This open beach site is located at outer Cabrillo Beach: 3720 Stephen White Drive, San Pedro. To access the site, turn from Stephen M. White Drive into the Cabrillo gateguard driveway. Follow the road, bear right past the old museum, to the lifeguard building. Sample is collected directly in front of the lifeguard building. See Thomas Guide page 854 grid C2.		

3.10 Jurisdiction 8 (Ballona Creek Watershed)

Setting

Jurisdiction 8 is comprised of eight responsible agencies: Cities of Los Angeles (lead agency), Beverly Hills, Culver City, Inglewood, West Hollywood, Santa Monica, County of Los Angeles, and Caltrans. The jurisdiction encompasses the West Los Angeles, Westwood Village, Culver City, Hollywood, Cienega, and Windsor Hills watersheds as defined by the Regional Board. The combined size of the six subwatersheds in Jurisdiction 8 is approximately 82,850 acres; however, 13 acres of National Park Service and 414 acres of Miscellaneous State land are currently excluded. The RWQCB recommended that these areas be excluded at this time, since the Miscellaneous State land will be covered by a separate NPDES permit issued by the Regional Board and the National Park Service land is accounted for in the reference system approach. Leaving 82,422 acres of the effective watershed area[13]. The effective watershed area fall under the jurisdiction of the following responsible agencies:

City of Los Angeles (lead agency)	67,024 acres
County of Los Angeles	3,927 acres
City of Beverly Hills	3,630 acres
Culver City	3,234 acres
City of Inglewood	1,935 acres
Caltrans	1,206 acres
City of West Hollywood	1,201 acres
City of Santa Monica	265 acres

Compliance Location

Jurisdiction 8 has one site where monitoring data will be collected. In a letter dated October 28, 2003, the Regional Board clarified that this location should be included in this Plan as a compliance site. Refer to page 3, conclusion that was noted in the subject letter, "Therefore, Regional Board staff believes that it would be premature to require submittal of TMDL compliance plans and set interim compliance targets for these beach locations prior to developing the overall TMDL compliance plans and schedules for the proposed Malibu Creek Watershed Bacteria TMDL and the forthcoming Ballona Creek Watershed Bacteria TMDL." Thus indicating their implementation will be highly dependent upon the overall implementation plans developed to comply with the upcoming Ballona Creek Bacteria TMDLs. The approximate location of this site is shown in Figure 12 in Appendix P. A description of the compliance location follows:

[13] The overall effective watershed area may change depending on how the Regional Board decides to enforce National Parks Service and Miscellaneous State area to comply with the TMDLs.

Site Id: SMB-BC-1	**Status:** Moved	**Type:** Point Zero
Historical Site Id: S10	**Subwatershed:** Ballona Creek	**BayKeeper Id:** N/A
Comments: The City of Los Angeles's historical site S10 is to be moved to the wave wash of Ballona Creek. However, due to the width of the channel, the exact location where the sample will be collected remains to be determined.		

3.11 Jurisdiction 9 (Malibu Creek Watershed)

Setting

Jurisdiction 9 is comprised of 12 responsible agencies: County of Los Angeles (lead agency), County of Ventura, Cities of Agoura Hills, Calabasas, Hidden Hills, Malibu, Simi Valley, Thousand Oak, and West Lake Village; Las Virgenes Municipal Water District (LVMWD), California Department of Parks and Recreation, and Caltrans. However, only eleven are participating in this coordinated shoreline monitoring program.

Although it is named a responsible agency under the SMBBB TMDLs, the LVMWD has its own waste load allocation of zero days assigned to one specific discharge point. Consequently, the LVMWD's compliance monitoring has been included in its NPDES permit for the Tapia Water Reclamation Plant; and therefore, participation in this shoreline monitoring program is not required for the LVMWD.

The jurisdiction encompasses twelve subwatersheds and covers an effective area of approximately 55,698 acres.

County of Los Angeles (lead agency)	19,890 acres
County of Ventura	15,360 acres
City of Thousand Oaks	6,292 acres
City of Agoura Hills	5,178 acres
City of Calabasas	4,279 acres
City of West Lake Village	3,540 acres
City of Malibu	536 acres
Caltrans	342 acres
City of Simi Valley	123 acres
City of Hidden Hills	105 acres
California Department of Parks and Recreation (beaches only)	53 acres

Compliance Locations

Jurisdiction 9 has three sites where compliance will be measured; all of which are historical sampling sites. In a letter dated October 28, 2004, Regional Board staff stated that although these three sites are compliance locations for the SMBBB TMDLs, implementation at these sites will be highly dependent upon the overall implementation plan developed to comply with the recently adopted Malibu Creek Bacteria TMDL. The approximate locations of the three JG9 compliance sites are shown in Figure 13 in Appendix P. A description of each compliance location follows:

Site Id: SMB-MC-1	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS003	**Subwatershed:** Malibu Creek	**BayKeeper Id:** N/A
Comments: This existing site is situated at Malibu Point on Malibu State Beach. See Thomas Guide page 629 grid B7.		

Site Id: SMB-MC-2	**Status:** Existing	**Type:** Point Zero
Historical Site Id: S1	**Subwatershed:** Malibu Creek	**BayKeeper Id:** s2d290
Comments: This existing site is situated at the breach point of Malibu Lagoon on Malibu State Beach. See Thomas Guide page 629 grid B7.		

Site Id: SMB-MC-3	**Status:** Existing	**Type:** Open Beach
Historical Site Id: DHS002	**Subwatershed:** Malibu Creek	**BayKeeper Id:** N/A
Comments: This existing site is situated by the Malibu pier on Carbon Beach near the mouth of Malibu Creek. See Thomas Guide page 629 grid B7.		

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4.0 MATERIALS AND METHODS

This section is intended to provide a uniform methodology for conducting field sampling and laboratory analysis of the compliance monitoring sites. Data reporting procedures are also discussed.

4.1 Sampling Schedule

The monitoring program will begin as soon as all Memoranda of Agreement have been executed between the City of Los Angeles and those agencies using the City's services, but no later than November 1, 2004. Monthly updates on the progress of the Memorandum of Agreements will be provided to the Regional Board.

The proposed compliance monitoring program comprises 67 sites monitored on a weekly basis. All routine samples will be collected on Mondays, and accelerated samples collected on Wednesdays and Fridays. For those sites where daily samples are currently collected, all data will be submitted to the Regional Board. As of March 2004, three agencies are prepared to handle sample collection and analysis for the proposed program: City of Los Angeles Environmental Monitoring Division (EMD), County of Los Angeles Department of Health Services (LACDHS), and Sanitation Districts of Los Angeles County (LACSD). Table 4-1 below shows the sites for which each monitoring agency is responsible.

In addition to the 67 sampling sites, the proposed program also includes nine observation sites as discussed in Section 3.2. Observations will be made weekly or monthly at each observation site, depending on the observation site's proximity to a compliance monitoring site. Observations are expected to be made by EMD and LACSD.

Table 4-1. Sampling Responsibilities.

Sampling Agency	Compliance Monitoring Sites								
	J1	J2	J3	J4	J5	J6	J7	J8	J9
EMD	1-02, 1-03, 1-06, 1-08, 1-10, 1-12, 1-13, 1-14, 1-16, 1-17, 1-18	2-01, 2-02, 2-04, 2-07, 2-10, 2-11, 2-13	3-03, 3-04, 3-05, 3-06, 3-08,	none	5-01, 5-03, 5-05,	6-02, 6-03, 6-05, 6-06	none	BC-1	MC-2
LACDHS	1-01, 1-04, 1-05, 1-07, 1-09, 1-11, 1-15,	2-03, 2-05, 2-06, 2-08, 2-09, 2-12, 2-14, 2-15	3-01, 3-02, 3-07, 3-09	4-01	5-02, 5-04	6-01, 6-04	none	none	MC-1, MC-3
LACSD	none	none	none	none	none	none	7-01, 7-02, 7-03, 7-04, 7-05, 7-06, 7-07, 7-08, 7-09	none	none

Tidal Influence

At a few freshwater outlets and storm drains, the tide may push the freshwater discharge back into the drain during high tide conditions. Per an assessment done by EMD, late fall and winter months are most affected by the prevalence of high tides lasting more than a week, for possibility of sampling at an alternate time or day in the week. For the five sites submerged during +3 tides (SMB-2-2, 2-5, 2-10, 2-11, and 2-13), the TSC would determine in advance whether these sites can be monitored on a different day of the week or at a different time on the scheduled sampling day in order to avoid problematic tides. During periods when it is not possible to avoid the +3 tide by sampling on another day or later in the morning on the same day, the sampling

agencies (EMD and LACDHS) should not sample. Simply note in the database that this site was submerged due to a +3 tide, and could not be rescheduled within the day or week.

In addition to the five sites that are submerged during +3 tides, other sites may experience reverse flow during high tides (i.e., ocean water is flowing into the drain or creek at point zero). To determine tidal influence, field personnel will record tide height at the time of sampling and note whether reverse flow was observed. Once in the lab, lab personnel will measure and record conductivity in the database. The TSC and jurisdictional groups shall evaluate this data to determine what tidal level interferes with obtaining a sample at these sites. It is important for purposes of TMDL compliance to know whether the storm drain or creek was tidally influenced, since the REC-1 beneficial use must be met at all times, not just during the morning hours when samples are collected.

Shoreline samples will be collected every morning. Sample collection must be conducted during daylight hours after sunrise and before sunset. Sampling staff will check the weekly schedule before departure. Samples will be collected usually between 7:00 a.m. and 11:00 a.m. It is more dangerous to sample at night both due to an increased probability of assault and poorer vision, especially during stormy periods.

4.2 Sampling Procedures

The objective of a sampling program is to provide a representative sample for bacterial analysis following defined safety and quality assurance guidelines. The quality assurance guidelines shall include sampling protocol as well as sample documentation, preservation and holding time requirements. All contracted samplers or agencies (EMD, LACDHS, and LACSD) shall submit a sampling SOP for review by Regional Board staff. This SOP shall be specific about safety considerations, sampling protocol, and quality assurance guidelines. Appendix C (Field Sampling Equipment and Supply List), Appendix D (Field Sampling SOP) and Appendix L (Safety) provide examples of EMD's protocols.

Each sample shall be associated with recorded observations of site conditions, which should minimally include sample ID, collection date and time, weather conditions including rain measurement, sample characteristics (color and turbidity) and sampler's name, refer to Appendix E. Additional information shall be recorded at the time of sampling of point zero freshwater outlets to provide useful site characterization data for the TMDL re-opener. This should include whether the drain flowed, an estimation of flow, if flow reached the surf zone and whether sample location was moved the allowable 10 meters during wet weather. Since samples collected by agencies such as City of Los Angeles-EMD, LACDHS and LACSD are usually associated with recorded observations of site conditions (requirement of POTW-NPDES permits) these forms can also be used as chain of custody documentation.

Sampling should only occur when conditions can be assessed as SAFE. The safety of the sample collector is the top priority and should preclude scheduled sampling.

At all sampling sites, samples will be taken at ankle depth and on an incoming wave. Point zero sites will have samples collected at the wave wash of the associated freshwater outlet year-round, except during storms or other unsafe conditions, when samples will be collected as close as safely possible to the wave wash, but no further away than 10 meters down current of the storm drain or outlet. Also, refer to Section 4.1 "Sampling Procedures" for how to handle tidally influenced drains.

Procedures for missed samples

For occasions when a regularly scheduled site is inaccessible causing a missed sample, or a sample analysis is compromised resulting in a missed sample, the site should be reoccupied and sampled on the earliest convenient day within the week of the originally scheduled sampling date.

Procedures during Rainfall Events

During rain events, the zero point sampling may be moved to a maximum of 10 meters away from zero point for safety reasons.

Numeric Targets

The numeric targets for the SMBBB TMDLs are those specified in the Basin Plan amendment adopted by the Regional Board on October 25, 2001, which are the same as the limits specified by AB411 bathing standards and bacteriological standards for recreational waters (See Table 2 below).

Waste Load Allocations

Waste load allocations in the SMBBB TMDLs are expressed as an allowed number of exceedance days. The number of allowable exceedance days at a given location is determined by the number of projected exceedance days during the 90^{th} percentile year at either the designated reference site or historically at the location in question, whichever is lower. Allowable exceedance days, as determined by the reference site method, relative to a weekly monitoring schedule, are as follows:

- Summer dry-weather period = 0 allowable exceedance days;
- Winter-dry-weather period = 1 allowable exceedance day; and
- Wet-weather period = 3 allowable exceedance days

Procedures following Elevated Bacterial Levels (Exceedances)

For the first three years of the summer dry-weather period and the first six years of the winter dry-weather period, EMD, LACDHS and LACSD will conduct accelerated

testing 48 hours after the initial bacterial exceedances, and if necessary, EMD and LACSD will conduct accelerated testing 96 hours for those sites still exceeding bacterial indicators after 48 hours. For locations monitored by EMD, LACDHS, and LACSD, accelerated sampling, if necessary, will take place on Wednesdays and Fridays. Concerning analysis, all three indicator bacteria will be analyzed during accelerated monitoring. For those sites monitored by the responsible agencies, not all sites showing exceedances may be selected for accelerated sampling due to operational constraints. When this occurs, a systematic random selection of eight stations out of total stations showing bacterial exceedances will be made. However, if a site is deemed chronically problematic by the responsible agencies within that jurisdictional group, the group may select that site for accelerated sampling.

Table 4-2. Summary of Los Angeles Basin Plan bacteriological standards for recreational waters (REC-1).

Standard	**Bacterial limits**
Single sample for water contact[1]	Density of Bacteria on a Single Sample Shall Not Exceed: ▪ 10,000 total coliform bacteria/100mL; or ▪ 400 fecal coliform bacteria/100mL; or ▪ 104 enterococcus bacteria/100mL; or ▪ 1,000 total coliform bacteria/100mL, if ratio of fecal/total coliform exceeds 0.1
Rolling 30-day geometric mean[2]	Geometric Mean of Bacteria Density over a 30-day Period Shall Not Exceed: ▪ 1,000 total coliform bacteria/100mL; or ▪ 200 fecal coliform bacteria/100mL; or ▪ 35 enterococcus bacteria/100mL

[1]Regional Board Resolution 01-018
[2]CA Basin Plan Res 2002-002

The purpose of the increased monitoring is to identify the persistence of an exceedance, especially during dry weather when source identification will be a priority. This accelerated monitoring may not be as critical during wet weather at every location when the source of the exceedance is known to be storm water runoff. Accelerated testing during wet weather will not be conducted until the fourth year re-opener since this would not be a compliance issue until that time.

Equipment

Equipment and supplies needed for shoreline sample collection are listed in Appendix C.

Safety

In an effort to improve employee safety and health awareness and prevent occupational related injury and illness, the EMD and other participating laboratories have developed a safety program with the intention of satisfying the applicable federal, state, and local regulations. For example, EMD's Safety and Health Program is composed of specific elements required by Cal/OSHA General Industry Safety Order Section 5191:

Occupational Exposure to Hazardous Chemicals in Laboratories, and section 3203: The Injury and Illness Prevention Program, and any other applicable regulations. The written safety plan, titled ***The Chemical Hygiene Plan***, is available to all employees for review, and should be recognized as management's commitment to ensure that all employees carry out their work in the safest and most efficient manner possible. EMD employees will be kept familiar with the division's written Chemical Hygiene Plan (CHP) through training, annual review and monthly staff safety meetings.

It is EMD's policy and the policy of other participating agencies to have a safe working environment for all of its employees and that all field and laboratory work be performed in a manner that provides the highest level of safety for the protection of every employee. See Appendix L for detailed safety protocols.

4.3 Analytical Methodology

For the purpose of bacterial TMDL monitoring, seawater samples shall be tested for the presence of total coliform, fecal coliform, or *Escherichia coli* (*E. coli*), and enterococcus bacteria. All three of these indicator groups shall be quantified from a single sample collected at each designated monitoring site. Necessary dilutions or aliquot volumes shall be processed to insure that reportable values can be determined. Bacterial results are reported as organism type per 100 mL of sample. When selecting analytical bacterial methods for TMDL monitoring, the importance of fast recovery times (24 hours or less) should be emphasized.

All laboratories performing analysis for TMDL bacterial monitoring shall maintain Environmental Laboratory Accreditation Program certification (ELAP administered by California Department of Health Services) for specified methods from ELAP's "Field of Testing 126: Microbiology of Recreational Water". Additionally, all laboratories shall submit detailed SOPs for review by Regional Board staff. Appendix G provides an example of a SOP developed by the City of Los Angeles-EMD. Each analytical method used for the TMDL monitoring program shall be an approved EPA or Standard Methods for the Examination of Water and Wastewater, 18^{th}-20^{th} edition (APHA 1992-98) method. Laboratories receiving Regional Board approval may use other analytical bacterial methods for marine recreational and TMDL monitoring. Each laboratory shall be qualified for specific methods by participating in an inter-calibration exercise currently being developed by SCCWRP.

<u>Quality Assurance/Quality Control</u>

All laboratories must employ a program that associates quality assurance with the laboratory facility, staff, instrumentation and equipment, materials and methods, media and reagents, and data validation. These QA/QC measures may be included in the submitted SOPs or defined in a separate QA/QC document such as Appendix I. The quality assurance procedures shall be in accordance with Standard Methods for the Examination of Water and Wastewater, 18-20^{th} Editions (APHA 1992-98). All participating laboratories must maintain ELAP certification, provide QA/QC

documentation as required by Regional Board, and participate in periodic inter-calibration exercises.

Interlaboratory Calibration

Data from several laboratories (agencies) will be utilized to comply with the monitoring requirements of the Santa Monica Bay Beaches Bacterial TMDLs. At a minimum, the EMD, LACSD, and LACDHS laboratories will participate in this monitoring program. In order to ensure that these data are comparable relative to the level of quality, the participating laboratories will be requested to participate in quality assurance exercises. These QA exercises are meant to ensure standardization of sampling, analytical, and data handling/reporting methodologies and procedures, as well as intercalibration of the laboratories.

For the inter-laboratory calibration exercise, a performance-based approach will be used to ensure that data from participating laboratories are comparable. A calibration exercise utilizing a common sample will be analyzed by each laboratory. All participating labs will be required to fall within a +/- 0.5 median log count comparability goal (Noble et al. 1999)

Data Translation

The IDEXX chromogenic substrate method E. coli results will be converted to fecal coliform data by implementing a 1:1 translator. The application of a 1:1 translator was approved by the Los Angeles Regional Water Quality Control Board in October 2002 after review of the IDEXX and Membrane Filtration Study conducted by the City of Los Angeles (approval letter dated October 16, 2002, from Dennis Dickerson, Executive Officer).

4.4 Data Management and Reporting

Data Tabulation

Results will be entered into Excel spreadsheets that automatically compute results (MPN/100 mL for CS analysis and CFU/100 mL for MF analysis). These results will be given secondary review, corrected as needed, to ensure error-free data entry. Examples of microbiology's data worksheets can be found in Appendix E. Data acquisition, validation, reduction, and reporting procedures can be found in Appendix H.

Data Format and Archive

All data collected will be archived within the City of Los Angeles' Environmental Monitoring Division (EMD) LIMS database or comparable database. For non-City of Los Angeles monitoring agency performing bacteriological analyses, data will need to be submitted to EMD electronically in a comma-separated value (CSV) format on

a daily basis that contains the following table structure (Table 3) and syntax provided in Appendix J. The City of Los Angeles' ICSD staff will ensure electronic submissions of data are parsed and stored correctly into the LIMS database.

"Wet Weather" Determination

The SMBBB Wet Weather TMDL defines "wet weather" as "days with 0.1 inch of rain or greater and the three days following the rain event (Attachment A to Resolution No. 2002-022, Page 4); however, the TMDL does not specify where the 0.1 inch of rain is to be measured. For clarification, the Technical Steering Committee has proposed, in Table 4-3, a set of rainfall gages this shoreline monitoring program will use to determine wet weather days. The locations of these rain gages are illustrated in Figure 14 in Appendix P.

Table 4-3. Summary of rainfall gages to be used for the proposed shoreline monitoring program.

Jurisdictional Group	Rainfall Gages	Comment
1a (Corral subwatershed and west))	Lechuza Patrol (454)	LACDPW "ALERT" Station
1b (Carbon subwatershed and east)	Big Rock Mesa (320)	LACDPW "ALERT" Station
2a (north)	Big Rock Mesa (320)	LACDPW "ALERT" Station
2b (south)	LAX	National Weather Service
3	Ballona Creek (370)	LACDPW "ALERT" Station
4	Lechuza Patrol (454)	LACDPW "ALERT" Station
5	LAX	National Weather Service
6	Redondo Beach City Hall (42C)	LACDPW non-recording gage
7	LACSD – Inside Paseo del Mar pumping station at Western and Paseo del Mar,	LACSD non-recording gage
8 (Ballona Creek watershed)	Ballona Creek (370)	LACDPW "ALERT" Station
9 (Malibu Creek watershed)	Agoura (317)	LACDPW "ALERT" Station

The proposed gages include four ALERT (Automatic Local Evaluation in Real-Time) stations and one non-recording rain gage station owned and operated by the County of Los Angeles. The ALERT stations use tipping buckets with electronic datalogger and real-time radio frequency data telemetry. Data can be obtained at http://www.ladpw.org/wrd/precip/ under "Near Real-Time Precipitation Map." The webpage displays 1, 3, 6, 12, 24, 36, 48, and 72 hours accumulated precipitation as well as the last 30 days of precipitation data for all of the County's 62 ALERT rainfall gages, and is updated every 10 minutes. The City of Redondo Beach will provide data from the non-recording gage to the City of Los Angeles Environmental Monitoring Division. When data from Redondo Beach is not available, data from the LAX rain gage will be used as an alternative. Data from the LAX rain gage can be accessed on the internet at http://www.nwsla.noaa.gov/climate/climate.html.

It is important to note that the LACDHS will continue to issue rain advisories based on data from the National Weather Service's rain gage at USC. EMD will coordinate with LACDHS, when necessary, to schedule accelerated sampling at LACDHS sampling sites.

EMD intends to monitor rainfall data from the USC, LAX and two north Santa Monica Bay rain gages (454 and 318) to assess whether the multi-rain gage approach truly has merit, or if it should be modified or eliminated to streamline the data management process. EMD and the TSC will work with Regional Board staff to make that determination.

Exceedance Determination and Accelerated Sampling

Bacteriological data will be summarized in tabular form on a daily basis by EMD's Microbiology Unit. Exceedances will be clearly notated and triggers indicating "accelerated monitoring needed" will be programmed into the report. Summer dry weather, winter dry weather, and Wet-Weather spreadsheets with triggers will be created. When bacterial levels no longer exceed AB411 standards, a trigger to return to weekly sampling will be programmed.

Each monitoring agency (EMD, LACDHS, and LACSD) will be responsible for performing its own compliance checking against AB411 standards and accelerating monitoring as required. The 96-hour accelerated testing will be conducted by EMD and LACSD.

Data Reporting

Monthly data summary reports will be submitted to the Regional Board by the last day of each month for data collected during the previous month. Two agencies will submit the monthly reports on behalf of all responsible agencies: EMD on behalf of Jurisdictional Groups 1 through 6, 8, and 9; and LACSD on behalf of Jurisdictional Group 7. LACDHS will submit its data to EMD for compilation for submittal to the

Regional Board. Copies of the monthly reports will be distributed to the lead agency of the appropriate jurisdictional group. If requested, the lead agency of each jurisdictional group will distribute the monthly reports to the responsible agencies within their respective jurisdictional group.

For EMD, laboratory results will be entered into Microsoft Excel spreadsheets that automatically compute results (MPN/100 mL or CFU/100 mL). All monitoring agencies (EMD, LACSD, and LACDHS) will archive their own data within LIMS or a comparable database. Please see Appendix H, "Data Acquisition, Reduction, Validation, and Reporting Procedures."

REFERENCES

American Public Health Association. 1992. Standard methods for the examination of water and wastewater, 18th ed. American Public Health Association, Washington, DC, pp. 9-1 to 9-115.

Noble, R. T., J. H. Dorsey, M. K. Leecaster, M. Mazur, C. D. cGee, D. Moore, V. Orozco-Borbón, D. Reid, K. Schiff, P. M. Vainik, and S. B. Weisberg. 1999. Southern California Bight 1998 Regional Monitoring Program. I. Summer Shoreline Microbiology. Appendix C, comparison of Bacterial Indicator Measurements among Southern California Marine Monitoring Laboratories. Southern California Coastal Water Research Project. Westminster, CA, 54-67.

TMDL Draft. The following TMDL drafts are cited in this report:

Total Maximum Daily Load to Reduce Bacterial Indicator Densities during Dry Weather at Santa Monica Bay Beaches—January 14, 2002

Santa Monica Bay Beaches Wet-weather Bacteria TMDL Draft—Version 4. 11/07/02

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